

IEEE North Jersey Section Seminar  
Object-Oriented C++ Programming

Tuesdays, September 13 -November 21, 1994  
Jersey Central Power & Light Co., 300 Madison Avenue, Morristown, N.J.

The North Jersey Section is offering an evening course entitled "Object-Oriented C++ Programming." Object-Oriented programming has been described as the biggest advance in computer programming since the creation of higher level languages 30 years ago. Instead of focusing on functionality (what the programs do) it focuses on the natural objects comprising the problem and how they, and their capabilities, are modeled in the program. C++ is, by far, the most widely used language today for object-oriented design and programming. This course will cover both the concepts of OOD and their implementation in C++ code. The course will begin with a review of common aspects of C and C++ but this time will be too brief to learn C. **THEREFORE ONLY THOSE WHO ARE FAMILIAR WITH C SHOULD REGISTER FOR THE C++ COURSE.**

There will be 9 weekly lectures and homework will be assigned and corrected. The topics listed below will be covered. The instructor is Dr. Edward (Ted) Byrne, owner of a software consultant business.

- (1) - Review common elements of C and C++: punctuation and keywords, variable naming, typing and scope, functions and subfunctions, arguments, operators and assignments, conditionals and logical variables, looping and testing, handling text strings, arrays and structures, pointers.
- (2) - Concept of Object-Orientation: objects and classes of objects, methods and messages, encapsulation and abstraction, overloading of functions and operators, inheritance and polymorphism.
- (3) - C++ improvements to C: new commands and operators, comments, stream I/O, function prototypes, more explicit typing and linking.
- (4) - C++ implementation of objects: what is a C++ object, data and method functions within an object, public, private and friend, static and dynamic objects, constructors and destructors.
- (5) - Encapsulation and abstraction within C++ objects: references and aliases, scope control operator, 'this' object, overloading, functions, operators.
- (6) - Inheritance and polymorphism among C++ objects: parent class or object, extending classes, redefining object data and methods, multiple inheritance, templates.
- (7) - C++ I/O streams: standard I/O, formatted I/O with manipulators, disk and device I/O.
- (8) - C++ library classes and their use: characteristics of a good library class, conversion base classes, video base classes, window base classes, database base classes.
- (9) - Overall program structure with C++ objects: how to lay out a C++ program, how to reuse classes in a program, how to test and evolve a C++ program, how to find errors and debug C++ object programs.
- (10) - Object-Oriented design methodologies: Booch method, Coad Yourdon Nicola method, Shlaer Mellor method.

Class size will be limited to a maximum of 20 with a minimum registration of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after September 9, 1994 will require an additional late fee of \$25. No reservations will be accepted after September 12, 1994.

**Where:** Jersey Central Power & Light Co., 300 Madison Avenue, Morristown, N.J.  
**When:** Nine sessions, Tuesday evenings starting September 13 thru November 21, 1994, 6:30 PM to 9:00 PM.  
**Cost:** With Text Books and Borland Turbo C++ Compiler: IEEE Members \$280; Non-IEEE Members \$360.  
With Text Books only: \$IEEE Members \$200; Non-IEEE Members \$280  
**Contact:** Mr. John A. Baka at (201) 455-8534 (Business)

**Registration "Object-Oriented C++ Programming"**  
**To:** Mr. John Baka, Distribution Engineering, JCP&L Company, 300 Madison Avenue, Morristown, NJ 07962-1911

Name \_\_\_\_\_ IEEE No. \_\_\_\_\_  
Affiliation \_\_\_\_\_ Phone No. \_\_\_\_\_  
Address \_\_\_\_\_

Check if Borland Turbo C++ Compiler is needed or not      Yes [ ]      No [ ]

Please enclose required fee payable to **North Jersey Section IEEE.**

Signature \_\_\_\_\_

NJ PES/NJ Princeton IAS:  
Nuclear Fusion And  
Tokamak Operation

On September 15, 1994, the North Jersey Power Engineering Society and North Jersey-Princeton Industrial Applications Society Chapters will present a talk on "Electrical Engineering Aspects Of Magnetic Fusion R&D." The speaker will be Charles L. Neumeyer of Raytheon Engineers and Constructors Inc.

**About The Talk**

Nuclear fusion technology offers the promise of a virtually inexhaustible source of energy for electric power production. However, the technical challenges are formidable and even after nearly four decades of intensive research the goals remain elusive. Still, progress has been substantial and recently the production of several megawatts of controlled thermonuclear power in a deuterium-tritium plasma was achieved by the Tokamak Fusion Test Reactor (TFTR) at Princeton University's Plasma Physics Laboratory (PPPL). A new generation of experimental devices are now on the drawing board with the aim of useful application of the technology in the first half of the next century. The electrical engineering challenges associated with the tokamak technology are significant. Hundreds of megawatts of conditional DC power must be delivered to the magnetic confinement and heating systems with great precision and control. A combination of utility grid and energy storage devices provide a source of the AC input power. While the next generation of machines will rely on superconducting magnets to reduce the power consumption which is typical of the present generation of machines, power demands will still be large during plasma current ramping, and new additional problems are introduced related to the quench protection of the superconducting magnets.

**About The Speaker**

Mr. Neumeyer received his BSEE degree from the University of Virginia and MSEE from Polytechnic Institute of New York. He has been associated with the program at PPPL since 1976. He was the Power Systems Branch Head for the TFTR, and is now the Power Systems Engineering Manager for the Tokamak Physics Experiment (TPX).

**Time:** 7:00 PM, Thursday, September 15, 1994.

**Place:** JCP&L Co., Punch Bowl Room, 300 Madison Avenue, Morristown, N.J.

**Reservations and Information:** Ken Oexle (JCP&L) (201) 455-8481.



PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

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*Vehicular Technology Soc.:*  
**Wireless Personal  
And Vehicular  
Highway Systems**

On August 16, 1994, the North Jersey Chapter, IEEE Vehicular Technology Society will present a talk on "Wireless Personal Communications And Intelligent Vehicular Highway Systems." The speaker will be Ron Schneiderman.

**About the Topics**

The first topic will be an overview of wireless personal communications, emphasis being placed on products and markets, personal communications services, mobile satellite services, WLANs, WPABXs, International cellular/PCS markets, paging/wireless messaging, and mobile computing. The second topic will cover the technology for the IVHS market. The various high-tech products and services already available and in the planning stages will be discussed. If time allows, Mr. Schneiderman, an editor by profession, will give advice on getting your article published.

**About The Speaker**

Ron Schneiderman has had a career rich in publishing accomplishments, most recently at *Microwaves and RF* where he is Sr. Editor/News. Before that he was with *Systems and Software, Electronics, Merchandising, Electronic News*, and others. He has had numerous freelance assignments, mostly in high technology. He is author of several books, including "Wireless Personal Communications", Penton Publishing.

**All Welcome**

You do not need to be an IEEE member to attend. Come, and bring your friends. There is no charge for admission, light refreshments will be served.

**Time:** 7:30 PM, Tuesday, August 16, 1994.

**Place:** KDI/Triangle Electronics Inc., 60 South Jefferson Road, Whippany, N.J. (Route 287 to Route 10 exit.)

**Information:** Mel Lewis (914) 968-2500, ext. 2304, or Art Greenberg (201) 492-1207.

*North Jersey Section PACE:*  
**Start And Manage  
Your Own Business**

At the August 11, 1994 meeting of the North Jersey Section's Professional Activities Committee for Engineers, Part Two of "How To Start And Manage Your Own Business" will be presented by SCORE, Chapter 24, Clifton Branch.

**Thursday, August 11, 1994**

**Section II:**

- 4. Marketing
  - a. Research the market place.
  - b. Know your products and competitors.
  - c. Marketing plan.
  - d. Methods of advertising.
- 5. Business Plan
  - a. Why is it needed?
  - b. Detailed review of the outline.
- 6. Financing the Business
  - a. Sources of funds
  - b. Information requirements
- 7. Wrap-Up
  - a. Location.
  - b. Franchises.
  - c. Patents, proprietary rights, confidential disclosure.

**Time:** 7:30 PM, Thursday, August 11, 1994.

**Place:** JCP&L Co., 300 Madison Avenue and Punch Bowl Road, Morristown, N.J.

**Information:** Robert Sinusas (201) 228-3941.

**AUGUST, 1994**

Publication No: USPS 580-500

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NEWSLETTER STAFF

Editor.....M.M. Perugini  
Business Manager..... A.M. Beattie

**Deadline for receipt of material** is the 1st of the month preceding the month of publication. All communications concerning editorial and business matters, including advertising, should be addressed to: The IEEE Newsletter, c/o Girard Associates, Inc., 6 Robert Terrace, P.O. Box 455, Mt. Arlington, N.J. 07856 (201) 398-5524.

**IEEE North Jersey Bulletin Board System:**  
0 TO 9600 baud, 8 bits, no parity, 1 stop bit, BBS phone number: 201 325-3769.  
(Courtesy of United Societies of Engineering & Science of NJ, Inc.)

**REPORT ADDRESS CHANGES TO:**  
IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08854-1331, (908) 981-0060  
It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters in New York. This means the Section has no need to maintain a mailing list or addressing plates. Section membership records are changed when Headquarters notifies us.

SECTION OFFICERS

Chairman..... Vittal Rebbapragada

Vice-Chairman-1 ..... Tom De Nigris  
(201) 533-9325

Vice-Chairman-2..... Al Connelly  
(201) 616-0755

Treasurer..... Art Greenberg  
(201) 942-0048

Secretary ..... Mel Lewis  
(914) 968-2500, ext. 2304

Members-at-Large:  
Har Dayal, Dave Dietsche, Richard Estock

*Please note that Vittal Rebbapragada, Section Chairman, is on assignment for a few months. Any questions regarding Section Activities should be directed to the Vice Chairmen or Section Secretary.*

*The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7 PM. These meetings are open to all members. Information on meeting agenda is available from Mel Lewis, Section Secretary.*

North Jersey Section Activities  
AUGUST 1994

**Aug. 3**—"North Jersey Section Executive Committee Meeting"—7:00 PM, Plant 11, GEC-Marconi, 164 Totowa Rd., Totowa, N.J. Mel Lewis (914) 968-2500, Ext. 2304.

**Aug. 11**—"Section Two: Start And Manage Your Own Business"—North Jersey Section PACE, 7:30 PM, JCP&L Co., 300 Madison Ave. & Punch Bowl Road, Morristown, N.J. Robert Sinusas (201) 228-3941.

**Aug. 16**—"Wireless Personal Communications and Intelligent Vehicular Highway Systems"—North Jersey Vehicular Technology Society, 7:30 PM. For location contact Mel Lewis (914) 968-2500, Ext. 2304.

**Aug. 18**—"Reliability-Centered Maintenance"—North Jersey Section PES/IAS, 7:00 PM, JCP&L Hq., 300 Madison Ave., Morristown, N.J. Ken Oexle (201) 455-8481.

Upcoming Meetings

**Sept. 7**—"North Jersey Section Executive Committee Meeting"—7:00 PM, Plant 11, GEC-Marconi, 164 Totowa Rd., Totowa, N.J. Mel Lewis (914) 968-2500, Ext. 2304.

**Sept. 8**—"Employment Transitions: Making Financial Decisions As You Leave Your Job"—North Jersey Section PACE, 7:30 PM, JCP&L Co., 300 Madison Ave. & Punch Bowl Road, Morristown, N.J. Robert Sinusas (201) 228-3941.

**Sept. 13-Nov. 21**—"Seminar: Object-Oriented C++ Programming"—North Jersey Section, Tuesday Evenings, 6:30-9:00 PM, JCP&L Co., 300 Madison Ave., Morristown, NJ John A. Baka (201) 455-8534.

**Sept. 14-Nov. 15**—"Seminar: Introductory C Programming"—North Jersey Section, Wednesday Evenings, 6:30-9:00 PM, JCP&L Co., 300 Madison Ave., Morristown, NJ. John A. Baka (201) 455-8534.

**Sept. 15**—"Electrical Engineering Aspects Of Magnetic Fusion R&D"—NJ PES/NJ Princeton IAS, 7:00 PM, JCP&L Co., Punch Bowl Room, 300 Madison Ave., Morristown, NJ. Ken Oexle (201) 455-8481.

**Sept. 22**—"Seminar: An Overview Of Multimedia Technologies And Services"—IEEE NJ Coast Section Computer Chapter, 8:30 AM-3:00 PM, Ocean Place Hilton, Long Branch, N.J. K. Raghunandan (908) 758-2078.

**Oct. 2**—"North Jersey Section Executive Committee Meeting"—7:00 PM, Plant 11, GEC-Marconi, 164 Totowa Rd., Totowa, N.J. Mel Lewis (914) 968-2500, Ext. 2304.

**Oct. 5**—"Videoconference: ISO 9000: A Critical Review Of The 1994 Revisions"—North Jersey Section, 12 Noon-3:00 PM, IEEE Service Center, 444 Hoes Lane, Piscataway, N.J. Carolyn Yankoski (908) 562-5493 or c.yankoski@ieee.org. See Fall schedule listed in this newsletter.

**Oct. 13**—"The U.S. And Competitiveness"—North Jersey Section PACE, 7:30 PM, JCP&L Co., 300 Madison Ave. & Punch Bowl Road, Morristown, N.J. Robert Sinusas (201) 228-3941.

**Oct. 21**—"Awards Reception"—Birchwood Manor, Whippany, N.J., 6:45 PM. Watch for reservation details in September/October issues of the Newsletter. Advance Information: Anne Giedlinski (201) 455-8556.

**Nov. 7-8**—"1994 Second Adaptive Antenna Systems Symposium & Electronic Exhibition"—IEEE LI Chapters of AES, AP, MTT, & SP, Melville, N.Y. Thomas A. Campbell (516) 757-3008.

Members and Non-Members Welcome  
PLEASE POST

Professional  
Activities  
Committees for  
Engineers NEWS

By Richard F. Tax

(The following is an IEEE United States Activities Board Entity Position Statement.)

Alternative Certification Of Engineers As Precollege  
Science And Mathematics Teachers

This Statement was developed by the Precollege Education Committee of the United States Activities Board (USAB) of The Institute of Electrical and Electronics Engineers, Inc. (IEEE), and represents the considered judgment of a group of U.S. IEEE members with expertise in the subject field. The IEEE USAB promotes the career and technology policy interests of the 250,000 electrical, electronics, and computer engineers who are U.S. members of the IEEE.

It is our position that most states make it burdensome financially and in terms of self-esteem for professionals without formal pedagogical training to become certified as teachers. Engineers with years of training in mathematics, science, and technology and practical knowledge of their applications on the job are excellent candidates for the teaching profession. The pool of candidates who wish to make a career change because of early retirement, because they want to make a contribution to technological literacy, or because they simply want to teach, is sizeable. They may require training in teaching techniques, but they are well equipped in technical knowledge and practical engineering experience.

In support of this position:

- We encourage state legislatures and departments of education

EDITORIAL

Shortage Alarms Ring Hollow—Again

In my July 9 Editorial, "Engineers as Educators," I suggested that out-of-work and early-retired engineers might be effective science and math teachers in our public schools, an area that seemed to exhibit a shortage of such talent. This Editorial brought some interesting responses from our readers.

First, a comment in a letter from Allen N. Wollscheidt, Columbus, Ind.: "I suspect that there is the same truth to the 'teacher shortage' as there is to the '(electrical/electronic) engineer shortage,' namely—hogwash." Could he be right? All of us know about the hogwash about the engineering shortage that continues to plague engineers. Could these same baseless alarms of a shortage of engineers be happening again in the teaching profession?

Another reader sheds further light on the situation. I received a telephone call from Richard F. Tax, who was a member of the Manpower Committee of the IEEE U.S. Activities Board in 1990. Tax, who also is a vice president of the grass-roots American Engineering Association described in some of our previous Editorials, reported that the Manpower Committee speculated on the possibility of engineers moving into teaching to relieve what appeared to be a shortage of science and math teachers. They performed a mail survey of the Departments of Education in the contiguous 48 states plus the District of Columbia, and turned up some surprising results.

to adopt alternative credentialing programs that will enable electrical and electronics engineers to enter the teaching profession with a minimum of retraining and financial burden during the transition. While we acknowledge that a certain amount of training in pedagogy and child development is necessary, we submit that it can be obtained in relatively unobtrusive and nonprejudicial ways, such as an intensive short course followed by mentoring, team teaching, or periodic reinforcement courses, permitting the individual to continue earning at a level commensurate with his technical training and experience and at a wage comparable to that of teachers at a similar stage in their lifelong careers;

- We recommend that state legislatures and departments of education consider hiring electrical and electronics engineers as advisors or resources for math and science teachers at the state, district, or school level, to incorporate engineering ideas and concepts into the teaching of mathematics, science, and technology; and

- We encourage IEEE U.S. members to volunteer their services as resource persons supporting teachers and school districts in states that have initiated a program to improve the math, science, and technology curriculum

Of the survey's 33 responses, 13 states reported that they had no shortage of science and math teachers. What's more, five reported a surplus of such teachers, while only five reported a shortage (Alabama, Maine, Delaware, South Carolina, and West Virginia). Ten states did not respond. The committee's conclusion: "The few shortages that exist do not warrant a nationwide effort to train more math and science teachers."

Thanks to Messrs. Wollscheidt and Tax for their comments and for shedding some light on this subject. If the State Departments of Education say they're well-stocked with science and math teachers, then I suppose I'll have to stand corrected. There's no engineering shortage, and evidently there's no teacher shortage, either.

However, let's not stray too far in identifying similarities in the problems of those two professions. We know there's a problem with the state of science and math education in the U.S., but I haven't heard anyone complain about the poor state of engineering in this country. I'll stand by my premise that engineers would make excellent math and science teachers—probably better teachers, in fact, than those who are part of that overabundant supply uncovered by the IEEE.

Steve Scrupski, Editor-in-Chief

(Reprinted with permission from "Electronic Design", August 20, 1992, Penton Publishing Co.)

## IEEE North Jersey Section Seminar “Introductory C Programming”

Wednesday Evenings, September 14 - November 15, 1994, 6:30-9:00 PM  
Jersey Central Power & Light Co., 300 Madison Avenue, Morristown, N.J.

The North Jersey Section is offering an evening course entitled “Introductory C Programming.” C is one of the most widely used computer programming languages because it is powerful, portable and permissive. It is also the basis for C++, the popular object-oriented programming language. This course will be an introduction to C and will cover all the basics of the language as well as emphasizing C’s philosophy or world view. The course will cover ANSI C on the PC but, because there are C compilers for most computers, the expertise will be applicable from PC through mainframe. The C techniques learned will be useful on their own, and also will be a preparation for either an advanced C course or a C++ course.

There will be 8 weekly lectures and each will be followed by a short optional work session. Homework will be assigned and corrected. The topics listed below will be covered. The instructor is Dr. Edward (Ted) Byrne, owner of a local software consultant business.

- (1) - Background of computers, operating systems, compilers and high-level languages.
- (2) - Introduction to C and the parts of a real C program: philosophy of C vs other languages, ANSI vs older C, nature and constituents of a simple C program, C program examples (ongoing).
- (3) - Reserved words, variables, declaration and definition, parameters, permanent,temporary, local and global data.
- (4) - Branching: simple and compound statements, relational operators and expressions and their use in branching, various kinds of branch statements.
- (5) - Loops and Conditions: various ways to enter and exit a loop, auto-incrementing, statement labels, goto.
- (6) - Formatted and character I/O: output to screen, input from keyboard, formatting, file and device input and output.
- (7) - Defensive programming and debugging: debugging levels, asserts, lint, case tools.
- (8) - Functions, subfunctions and arguments: names, arguments, return value, main program arguments, exit, return levels.
- (9) - Text and Libraries: character data type, string data type, characteristics of strings, libraries, and header files, #include statement, common functions, #define.
- (10) - Groups of similar and dissimilar data items: arrays, structures, indexing, items.
- (11) - Introduction to pointers: concept of a pointer, addresses, pointer arithmetic, indirection.
- (12) - Introduction to some advanced topics in C: touch on graphics, unions and enums,casts, typedefs, bit variables and operators, switch statement and case and default, conditional assign ment.

Class Size will be limited to a maximum of 20 with a minimum registration of 15. Early registration is recommended. Phone Reservations will **not** be accepted. Reservations accepted after September 9, 1994 will require an additional **late fee** of \$25. No reservations will be accepted after September 12, 1994.

**Where:** Jersey Central Power & Light Co., 300 Madison Avenue, Morristown, N.J.  
**When:** Eight sessions, Wednesday evenings, starting September 14 thru November 15, 1994 from 6:30 PM to 9:00 PM.

**Cost:** With Text Books and QuickC compiler: IEEE Members \$280; Non-IEEE Members \$360. With Text Books only: IEEE Members \$ 200; Non-IEEE Members \$280.

**Contact:** Mr. John A. Baka at (201) 455-8534 (Business)

### Registration “Introductory C Programming”

**To:** Mr. John Baka, Distribution Engineering, JCP&L Company, 300 Madison Avenue, Morristown, NJ 07962-1911

Name \_\_\_\_\_ IEEE No. \_\_\_\_\_

Affiliation \_\_\_\_\_ Phone No. \_\_\_\_\_

Address \_\_\_\_\_

Please enclose required fee made payable to **North Jersey Section IEEE**

Check if QuickC Compiler is needed or not Yes [ ] No [ ]

Signature \_\_\_\_\_

## North Jersey Section PACE: U.S. And Competitiveness

At the October 13, 1994 meeting of the North Jersey Section's Professional Activities Committee for Engineers, the topic will be “The U.S. and Competitive-ness.” The speaker will be Edward J. “Jack” Doyle.

### About The Talk

For the last decade plus, the United States has become increasingly less competitive in the global market, currently running trade deficits over \$100 billion annually. Some confuse the competitiveness problem with the current U.S. and world recession but they are two separate issues. The fact that we appear to be coming out of our recession leads to unwarranted optimism. The competition problem shows no sign of improvement.

Our negative balance of trade slowly but surely leads to a devaluation of the dollar since our competitors pile up dollars which are of little use to them. It leads to a decreasing standard of living and loss of jobs, mainly good jobs in manufacturing, for those products we do not make. It is particularly hard on engineering jobs because most of the lack of trade is in such technical areas as automobiles and consumer electronic products. For the last decade, U.S. engineering salaries have barely kept up with inflation. The speaker will talk about what is needed to correct this problem.

### About The Speaker

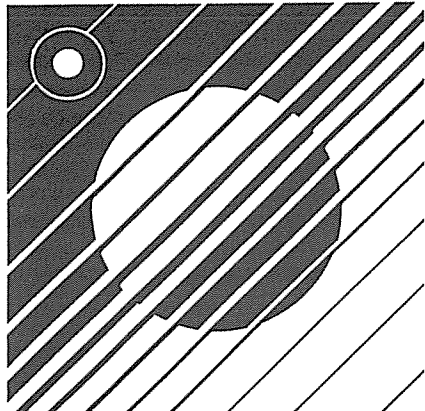
Mr. Doyle spent his engineering career with AT&T and a number of Bell companies, retiring from New Jersey Bell in 1985. In the 1960s he coordinated telephone services for Presidents Kennedy and Johnson. He has been active in IEEE and AIEE before it. He was a founder of the IEEE Communications Society and its first Director of Operations. He has been active in USAB on many committees and served as Vice President-Professional Activities. He is also currently chairman of the Engineering Workforce Commission in Washington and a trustee of the United Engineering Building in New York. In 1990 he founded the USAB Committee on U.S. Competitiveness and chaired it for three years.

**Time:** 7:30 PM, Thursday, October 13, 1994

**Place:** JCP&L Co., 300 Madison Avenue and Punch Bowl Road, Morristown, N.J.

### Information:

Robert Sinusas (201) 228-3941.



## IEEE VIDEOCONFERENCES SEMINARS VIA SATELLITE

### North Jersey Section: Videoconference Calendar

The Fall schedule for videoconferences offered by the IEEE Education Department is as follows:

#### October 5—

**ISO 9000: A Critical Review of the 1994 Revisions.**

Presenters: James Lamprecht, Int'l Consultant; Ann Jackson, Interleaf; and Ronald Muldoon, KPMG Peat Marwick.

An overview of the changes from the 1987 edition of the 9001 standard (the most complete standard), demonstrates how software tools can be effectively used to facilitate the documentation tasks, and provide an overview of the registration process.

#### October 19—

**Maximizing Productivity: Information Retrieval.**

Lead Presenter: Geo Wiederhold, DARPA/SISTO.

Today's complex computing environments integrate vast on-line databases, document bases, knowledge bases and application software. This situation drives the need for more powerful and responsive tools for locating and retrieving the right information at the right time, with a minimum of effort. Relevant technologies include case-based reasoning, neural networks, intelligent document retrieval, statistical analysis and multi-media user interfaces. This videoconference will address issues of technology selection, integration and interface design.

#### November 9—

**Mechatronics.**

Lead Presenter: Kevin C. Craig, Rensselaer Polytechnic Institute.

This program will discuss mechatronic system design principles and the role of the following: physical and mathematical modeling of dynamic systems, control systems, analog and digital control sensors and ac-

tuators, electronics, neural-network and fuzzy-logic control, analog, digital and hybrid mechatronic systems, magnetic bearings, active materials, and smart systems. Benefits will be shown how shorter development cycles, lower costs, increased quality, reliability and performance can be realized through mechatronics. Offered in cooperation with ASME.

#### November 30—

**Maximizing Productivity: Multimedia.**

Lead Presenter: Matt M. Perez, Director, Integrated Media Platform, SunSoft, div. of Sun Microsystems.

The entire range of multimedia technologies that is available to engineers to help improve their productivity is not being used to its fullest. This program will explore the multimedia technologies available to engineers and the trends for the future. You will see and hear the latest uses of multimedia on PCs and new developments, including virtual reality, now emerging as a tool for engineers.

#### December 7—

**Maximizing Productivity: Redesigning the Engineer & Designing for Maintainability**

Lead Presenter: William H. Long, Jr., Texas Instruments.

How does a design engineer maximize the amount of information obtained from built-in test systems without creating such a complex systems that product reliability becomes a suspect? This videoconference will deal with many of the add-on design constraints that ultimately impact product maintainability. This program will help engineers to involve and benefit from the knowledge of people from various disciplines; take a broader perspective of process steps and concerns which will bring about reductions in cycle time; eliminate the "Not-Invented-Here" syndrome by planning for, implementing and adopting the reuse of existing designs; and continuously engage in process improvement. In addition to these issues, we will also deal with improving the personal skills expected of the engineer.

### General:

Please note that the Multimedia VC has been rescheduled from September to November 30. All videoconferences are broadcast 12 noon - 3 PM Eastern Time and will be held at the IEEE Service Center, 444 Hoes Lane, Piscataway, NJ.

Registration is \$60/person with a 10% discount for 3 or more attendees from any one company. Registration cost for IEEE members is \$50/person. All attendees receive a copy of the conference notes. The IEEE cafeteria is available for attendees to obtain lunch at their own expense before, and snacks during the videoconference.

### College Credit:

As of this Fall, attendees will be able to obtain one (1) graduate credit through the California State University at Long Beach

Engineering College. Individuals must attend five (5) videoconferences and submit a pre-approved paper by a CSULB instructor.

### Professional Development Hours:

PDHs will also be available for all live videoconferences, videotape programs and tutorials. PDHs can be used to meet licensing requirements and to demonstrate participation in continuing education.

### Further Information:

Carolyn Yankoski, IEEE Service Center, Piscataway, NJ (908) 562-5493 or c.yankoski@ieee.org.

# RCM

Would you like to...

- Minimize unplanned shut-downs and emergency maintenance?
- Cut maintenance and spare parts costs?
- Raise plant reliability, availability, productivity, and profitability?

**Reliability-Centered Maintenance may be the answer!**

**Learn about RCM at the August IAS and PES Chapters meeting...**

**Date:** Thursday, August 18, 1994

**Time:** 7:00PM

**Place:** Jersey Central Power and Light HQ, 300 Madison Ave., Morristown, NJ

**Speaker:** Dick McFadden, IEEE Fellow, Chief EE, Science Applications International Corp., New York...a specialist in RCM and reliability-availability-maintainability management for industrial and utility power systems.

**A complimentary hot buffet will be served.**

**For preregistration (no fee) and information call...**

**Ken Oexle, JCP&L, (201) 455-8481,  
Vittal Rebbapragada, Raytheon E&C, (201) 804-2011, or  
Dick McFadden, SAIC, (212) 764-2820**



IEEE NJ Coast Section Computer Chapter  
PROFESSIONAL DEVELOPMENT SEMINAR  
An Overview of Multimedia Technologies  
and Services

Dr.A.Narasimhan, Tech.Ed Center, AT&T Bell Labs

ABSTRACT

Multimedia is an emerging and exciting field that requires integration of telecommunication, audio/video technologies, computing hardware and software, and information services. This seminar discusses the concepts of multimedia, why multimedia is becoming a key technology, what are the key applications, and the need for various multimedia component-technologies like compression, storage, hardware/software, etc. An overview of architectural requirements for supporting multimedia will be discussed. New networking technologies such as ATM, wireless LANs, and optical networks used in multimedia systems will be described. The course concludes with a look at future prospects, challenges for multimedia and its potential effect on home entertainment, work environment, communication and computing in the 90s.

**Seminar Topics:** Video conferencing, Information services, Multimedia collaboration, Interactive TV, Multimedia mail, software and databases. Compression (MPEG, JPEG). Communication technologies: Frame Relay, B-ISDN/ATM, and SONET. Multimedia market trends and its future.

**Luncheon Speaker:** Dr. Sid Ahuja, Head, Multimedia communications department, AT&T Bell Labs  
**TOPIC:** Recent advances in Multimedia Communications.

**DATE:** Sept 22, 1994 **TIME:** 8:30 am -3pm  
**LOCATION:** Ocean Place Hilton, Long Branch, NJ  
**REGISTRATION:** \$195 (non-Mem), \$175 (Mem) and \$125 (students), includes coffee, pastries and lunch..

For Information call/contact:

- (1) K. Raghunandan, 908-577-4202, Fax: 908-577-4537 email: raghu@fjtd.att.com
- (2) N. Natarajan, 908-758-2078, Fax: 908-758-4268, email: nat@cc.bellcore.com
- (3) Bala S. Prasanna, Room 1A-310, AT&T Bell Labs, 480, Red Hill Road, NJ 07748, Tel: 908-615-4486, Fax: 908-615-4637, email: joypras@corona.att.com

Early bird Registration : June 15, 1994 ( SAVE \$10)  
Registration deadline: July 15, 1994

About The IEEE Bulletin Board

The IEEE Bulletin Board has been on the air for over 600 days by the time this article was written and we are gearing up to handle two major services to the membership.

When reading this newsletter, you may see an article from time to time that has gone to press without the time or place where the meeting is to be held, maybe because of a problem in getting the information to the editor in time to meet publication deadlines. If this happens and the meeting coordinator calls with the information, it will be posted on the BBS in the appropriate category. Message areas have been set up for each Chapter and information about your Chapter's activities may be listed. Look for information there if the Chapter Chairman has a PC with a modem.

There will also be a message area where comments may be left for the Section Executive Committee, along with a message area set up called "Ask the Section Executive Committee." If you have some idea about what you think the IEEE should be doing, this is the forum. If you want to send email direct to someone in the committee and do not know their Log On #, you can find it by looking up that person's name in the list of users. If he/she is not on the list, send the email to the person you want to reach in care of Dave Perry at the BBS number listed in the Newsletter masthead and the information will be passed on. This procedure is more reliable than playing telephone tag.

The other major change is the introduction of a Job Bank and Skill Bank. If your

company has an opening and if you are a user of this BBS, you are welcome to mail the information to Dave Perry at the address listed below and it will be posted in the Job Bank. If you are a job hunter and would like to see what happens we will gladly post your skills in the Skill Bank.

The Job Bank messages will be read only by job hunters. Employers will not have access to the Job Bank as some employers may not wish their competitors to learn of their employment strategies. Job hunters will not have access to the Skill Bank as we feel that you may wish to make this information available to prospective employers only. Internet has job listings but does not provide these security features.

The Job Bank and Skill Bank will be carried on JOBSnet, a network being established specifically for the job hunter and employers looking for people. Access to JOBSnet information is available at no cost to the job hunter in money, but to use the Job Bank, the job hunter is expected to provide job listings.

Users who log on may also interface with Internet and FIDOnet. The BBS Bulletin area provides instructions on how to do this.

BBS use is new to many people, and new users sometimes feel that the BBS is not user friendly. For a written introduction on how the BBS and JOBSnet works, send a stamped self-addressed envelope to Dave Perry, United Societies, 57 Forest Hill Rd., West Orange, NJ 07052 or call me at (201) 325-3769.

Employment  
Transitions

At the September 8, 1994 meeting of the North Jersey Section's Professional Activities Committee for Engineers, the topic will be "Employment Transitions: Making Financial Decisions As You Leave Your Job." The speaker will be Edward Landau.

About The Talk

In dealing with separation from your most recent employer, there are a number of challenges on the horizon. This talk will offer help in managing your finances more effectively and advice on how to readjust timetables to accommodate your current situation. While some doors may have closed, new opportunities may have opened up in exciting areas. This type of change can often turn into a very positive experience.

Participants will be given workbooks to help them review their own financial situations. There will be a question and answer period at the end of the discussion.

About The Speaker

Edward Landau is a Personal Financial Planner with American Express Service Corporation. As a financial planner, he is licensed by the National Association of Securities Dealers in addition to holding NJ Insurance and Securities licenses.

Before becoming a financial planner, Mr. Landau spent over twenty years as an RF Design Engineer, Consultant and Engineering Manager.

**Time:** 7:30 PM, Thursday, September 8, 1994.

**Place:** JCP&L Co., 300 Madison Avenue and Punch Bowl Road, Morristown, N.J.

Information:

Robert Sinusas (201) 228-3941.

North Jersey-SP Society:  
Chairperson Needed

Anyone interested in Chairing the North Jersey Signal Processing Society please call or write John Burgess (201) 386-2736 (j.k.burgess@att.com) or Stephen Laico (908) 582-2717 (s.laico@att.com).

LI Symposium On  
Adaptive Antenna  
Systems

On November 7 and 8, 1994, the IEEE Long Island Chapters of AES, AP, MTT and SP, will sponsor a symposium on "Adaptive Antenna Systems." This will take place at the Radisson Plaza Hotel, Melville, N.Y.

Topics will be: Antenna Array Theory; Algorithms and Architecture; Radar and Communication Applications; Modeling and Simulation Theory; Microwave and Integrated circuit technology.

For information contact: Thomas A. Campbell, PO Box 36, Greenlawn, NY 11740-0036, (516) 757-3008.

Your professional move should be made to advance your career, not to get a new job. GLOBAL SUPPORT TECHNOLOGIES, Inc. can help you do so! GST Inc. is staffing up for long-term assignments and looking for degreed professionals with at least three years experience in the following categories:

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Forward resume to:  
GST, Inc., PO Box 164, Maplewood, NJ 07040, or FAX to: (201) 762-3101  
Candidates must be US citizens.

Engineers Network  
Association

If you are an experienced engineer seeking employment at a salary of at least \$35,000 per year, we invite you to join the Engineers Network Association, a metro area weekly forum for career networking and the exchange of job leads. Bring at least one unpublicized job lead that you do not intend to pursue, to share with others who may be interested. Dues are \$2 per meeting.

The Engineers Network Association meets 1:30 PM, every Wednesday at the Annunciation Church, W. 50 Midland Avenue, Paramus, N.J. G. S. Parkway to exit 163, then Route 17 north for 1/2 mile to "Midland Ave. (west) - Glen Rock" exit; Annunciation Church is just ahead on the left. From I-80: exit 62 to G.S. Parkway north, and proceed as above.

For further information, call Merrill Rutman (Member, IEEE), at (201) 447-6041.

AWARDS RECEPTION  
North Jersey Section IEEE

Birchwood Manor  
Whippany, N.J.

Friday Evening — October 21, 1994 6:45 PM

Reservation Details  
September/October Newsletters

Advance Information  
Anne Giedlinski (201) 455-8556

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<b>OBJECT-ORIENTED DESIGN</b>	<b>\$485</b>
<b>Internet</b>	<b>\$115</b>
<b>UNIX</b>	<b>\$215</b>

Call for other seminars, schedules  
and registration form  
Class sizes limited - Sessions start in  
July, August and September 1994.  
Seminars priced over \$500 are held at  
the lab with hands-on-sessions  
Lab locations:

78, Okner Parkway, Livingston,  
45, Knightsbridge Road, Piscataway  
(not all classes are held at this location)

Non-lab location  
Days Inn Hotel 3159 Rt. 46 E, Parsippany  
(Diskette with project solution given in seminars)  
(Seminars are not offered as vocational training  
or qualifying for any particular employment.  
Seminar credits not transferable for any  
accredited educational institution.)